

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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DIARY OF FORTHCOMING EVENTS

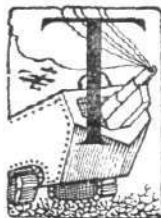
Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

May 31-June 9 Third Czecho-Slovak International Aeronautical Exhibition, Prague
June 15 Gordon Bennett Balloon Race, Belgium.
June 21 F.A.I. Conference Opens, Paris.....
July 24-Aug. 10 Tour de France for Light 'Planes.
Aug. 4 Aerial Derby at Lympne
Sept. 8-13 Light 'Plane Competitions at Lympne

INDEX FOR VOL. XXVIII.

The Index for Vol. XV of FLIGHT (January to December, 1923) is now ready, and can be obtained from the Publishers, 36, Great Queen Street, Kingsway, W.C. 2. Price 1s. per copy (1s. 1d. post free).

EDITORIAL COMMENT.



THE decision of the Air Ministry to grant a small subsidy to the Society of British Aircraft Constructors for the purpose of arranging a representative British exhibit at the forthcoming Aero Exhibition at Prague must be received with satisfaction by all who have the prestige of British aviation material at heart. We at home know that British machines and British engines are second to none, but if other countries carry out vigorous and persistent propaganda while Great Britain does nothing, there is always the very great risk that in time the qualities of our products will be overlooked, other and more "live" nations reaping, in the form of orders, the benefit of their propaganda, be this in the form of exhibitions, aviation missions, or individual demonstrations. In the case of international aero exhibits, Sir Samuel Hoare's Air Ministry set a splendid example by realising the importance of Britain being represented at the Gothenburg show last year, when a subsidy was granted the S.B.A.C. We are extremely glad that Lord Thomson's Air Ministry has followed this lead, and has promised to do for Prague what their predecessors did for Gothenburg. There is not the slightest doubt that the British stand at I.L.U.G. did a tremendous amount of good in impressing the Northern countries with the qualities of British aircraft material, and it is to be expected that participation in the Prague Aero Show will have equally beneficial results.

Prague, geographically, is very centrally placed as regards commercial aviation in Europe, and although there are those who are of the opinion that the old Czech city cannot become a really important centre, the Czechs themselves are fully determined that their capital shall become the "hub" of European aviation, with lines radiating in all directions. The Czech Republic has, during the last two or three years, pursued a vigorous aviation policy, in spite of handicaps of a financial as well as of a political nature. Machines have been purchased from abroad, while factories have been established at various places for

the production of machines of original design. Large sums of money have been spent on the Kbely aerodrome at Prague, and altogether the Czechs have given ample proof of their determination to take full advantage of the opportunities which the latest form of locomotion has to offer.

This will be the third International Aero Exhibition to be held at Prague, and from what can be gathered it will far exceed in importance the two previous ones. Not only will the participation by Great Britain add to the interest, but many more foreign firms will be exhibiting. It is expected that between 40 and 50 distinct types of aeroplanes will be shown, representing Great Britain, France, Italy, Germany, and Czechoslovakia. France will be very well represented, and it should be remembered that already our Ally has done much to introduce French aircraft to the youngest republic, and has obtained concessions of an important nature. Consequently, in the friendly rivalry between ourselves and our gallant Allies, it is of importance that Great Britain should be also worthily represented. Numerically, the British section will not, it is to be feared, equal that of France, but the list of firms published elsewhere in this issue indicates that as regards quality the British section will hold its own. It seems regrettable that not a single commercial British aeroplane is to be exhibited, but it is to be hoped that more than one type of modern civil machine will be flown to Prague during the exhibition and demonstrated over the Kbely aerodrome. Incidentally, there might, on the surface, seem to be a good deal of humour in the idea of exhibiting a British Fleet Spotter in Czechoslovakia. Actually, of course, there is nothing at all out of the way in the idea, as the exhibition will undoubtedly attract visitors from many important nations other than Czechoslovakia.

The British engine section will be well represented, and this is all to the good. Whatever the state of a small nation's aircraft industry, the home production of aero engines is usually a much more serious matter than the building of aircraft, and thus there is always an opportunity for selling engines even in countries where no foreign aircraft are purchased. British aero engines have a world-wide reputation, and it is therefore gratifying to learn that this side of the British aircraft industry is to be so well represented. Altogether, the Prague Aero Show should prove a very useful one, even if it does not quite equal in size the Gothenburg Show of last year.

Bravo "Pivolo" Lieut. Pelletier d'Oisy continues his meteoric flight across India. Setting out from Paris on April 24, he reached Calcutta on May 5, having covered the distance of approximately 6,270 miles in 12 days. Thus his average speed works out at about 21.75 m.p.h. Actually, of course, his speed is very much higher. Counting flying time only, it is above 100 m.p.h., which is extremely good, considering the very long non-stop flights made on nearly all the stages. The determination and physical endurance necessary for such a performance can, perhaps, scarcely be fully

appreciated except by those with personal experience of long-distance flights, even under favourable circumstances. Severe as the strain is on the engine, it is even more so on the crew, and "Pivolo," as he is affectionately nicknamed, may well be considered already to rank among such giants of long-distance flying as Sir Ross Smith and Sir John Alcock. France as a nation, no less than the pilot and his engineer, the Breguet firm, and the Lorraine-Dietrich Company, may well be proud of the achievement. That a certain amount of luck has entered into the performance may be admitted. Nevertheless Lieut. d'Oisy is not a man to trust too much to luck, as previous long-distance flights of his have demonstrated, and the excuse of luck should most certainly not be used to belittle in any way an achievement which, from whatever angle it is regarded, must forever rank among the greatest flights in history. "Pivolo" is now roughly half-way to his goal. Let us hope the second half will be as devoid of accident as has been the first half.

In the meantime the British world-fliers are still awaiting a new engine at Parlu. It is a most extraordinary piece of bad luck that the engine should twice have failed owing to much the same trouble, especially as, to the best of our knowledge, no such failure has ever been known to occur. Napier "Lion" engines have been used extensively on the air liners, and it might have been expected that if there were a weak spot in the reduction gear design it would have come to light during the hundreds of thousands of miles flown by machines fitted with these engines. The theory has been advanced that possibly the engine mounting may have been at fault, and that resonance may be at the back of the problem. There is on record the case of an aeroplane of a certain type in which one particular wire in the wing bracing continued to break. The wire was replaced by a heavier one, but this also broke. An "outsize" wire was then fitted, but this also failed. The question of resonance was then gone into, and the apparent mystery seemed likely to be solved. A small structural change was made, and it was found that the original size of wire was then equal to the work. In ordinary aircraft design cases like this do not normally arise: consequently, when they do, some surprise is usually felt. It is for this reason that we venture to suggest as at any rate a possibility that resonance may be the cause of the two mishaps, and that some quite minute change in the engine mounting might effect a cure. At any rate the experiment seems worth trying, and quite possibly the addition of a pair of struts may prove to be the only alteration necessary. Such a change could probably be made on the spot without great difficulty, and might be the means of enabling the British crew to complete their difficult journey without further troubles of this sort. We hope we shall not be thought presumptuous in making this suggestion. As far as we are concerned, it is certainly made in all humility, and we are actuated solely by a desire to see the British fliers put up a performance that will be of outstanding credit to British aviation.

Entries for British Helicopter Prize.

It begins to appear as if, after all, a good deal of fun may be derived from the prize of £50,000 offered by the Air Ministry for a helicopter to fulfil a certain series of performances. The entries list is now closed, and it is understood, although the official list has not yet been issued, that some 15 or 16 entries have been received. It appears likely that most if not all of these, are from abroad, as hitherto few British experimenters,

apart from Mr. Brennan, whose machine, it has been stated, will not be permitted to compete, have given any serious attention to the problem of the helicopter. Our own attitude towards the helicopter is already well known; but from the way in which the rules have been framed it seems that if a helicopter does succeed in fulfilling the requirements it will be a machine worth having, while if none passes the tests the country will have lost nothing.

BRISTOL "JUPITER" WITHIN THE ARCTIC CIRCLE

1,300 Kilometres in 6½ Hours on a Bristol Fighter

"EVERYTHING went off as well as possible. The engine worked like the mechanism of a clock."

These are the remarks made by Lieut. Gärden of the Swedish Army at the conclusion of a flight of 1,300 kilometres made by him between Kiruna and Malmslät in Sweden in 6½ flying hours. The machine used was a Bristol Fighter fitted with the 400 h.p. Bristol "Jupiter" radial air-cooled engine.

The machine had been specially sent to Kiruna, which

The first start was made inside the hangar, the temperature of which was -8°C . The engine was doped in the usual manner, and a start was made in 1½ mins. A full throttle run was made to test carburation, oiling, etc., and everything was proved to be thoroughly satisfactory. Skis were then fitted to the machine to enable it to land upon the deep snow with which the countryside was covered, and an initial test flight was made.

As one of the chief concerns of the authorities was in

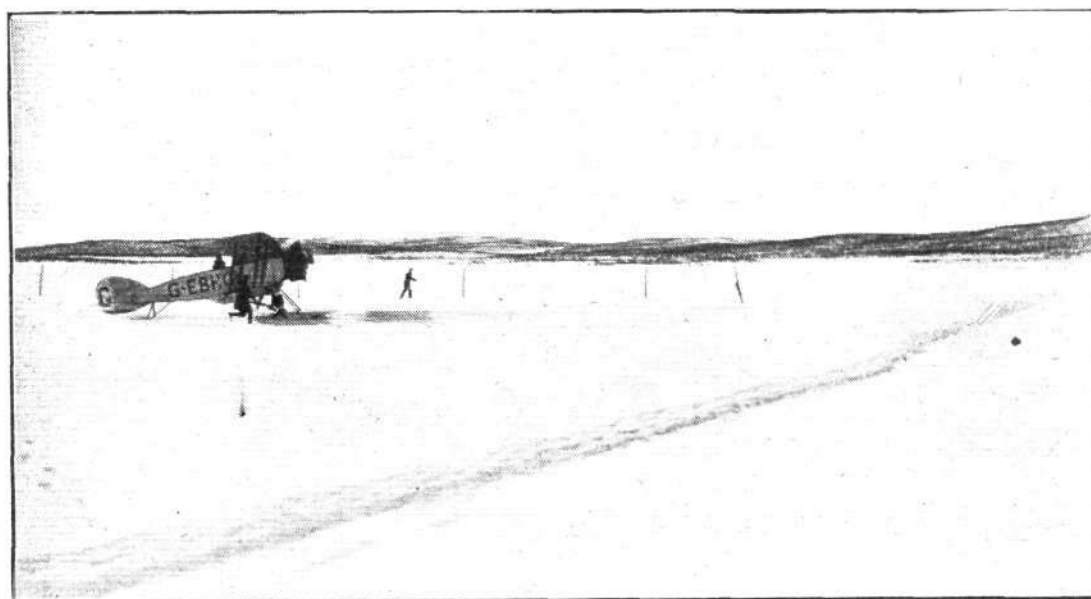


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A "Bristol" within the Arctic Circle: The Bristol Fighter, with Bristol "Jupiter" engine, starting for a flight at Kiruna aerodrome, Sweden. Note the ski undercarriage.
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is well within the Arctic Circle, by the Swedish military authorities in order to test out the air-cooled "Jupiter" engine under the most rigorous Arctic conditions. Considerable trouble had been encountered under similar conditions when water-cooled engines were used; both water and oil had to be heated before a flight was possible, and both had to be immediately drawn from the engine after

regard to the starting of the engine, the machine was left in an unheated hangar all night, with cold oil in the tank. The doors were thrown open at an early hour the next morning, and at 9.30 a.m., when the thermometer stood at -12°C , the engine was started quickly and without trouble. With their previous experience with other types of engines the officials in charge of the test expressed amaze-

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Landing on the Snow: The Bristol Fighter alighting at Kiruna after a trial flight.
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use. Air-cooled rotary engines had been found unsatisfactory in the low temperatures encountered, and with a static air-cooled engine which had been tried it had been necessary to drain the oil after flight and refill with oil at a high temperature before starting in the morning.

In the tests with the Bristol "Jupiter" engine Vacuum "A" oil was used for lubrication with pure Shell spirit.

ment at the ease of starting. During the day a duration flight of 1½ hours was made, and other flying undertaken to test out and demonstrate both engine and machine.

It was then decided to make a further test under the most searching conditions possible as to the suitability of the engine for easy starting under the Arctic conditions encountered. Throughout the night the hangar was left

open and cold oil was left in the tank. During the night the temperature dropped as low as -20°C. , but despite this fact the engine started the second time the propeller was swung, and was very quickly warmed up and ready to leave the ground.

From the aerodrome, which is 2,000 ft. above sea level, a climb to 3,000 metres (9,840 ft.) was made in $8\frac{1}{2}$ minutes; the barometer showed 28.85", the temperature on the ground was -10°C. , and at 3,000 metres -20°C. , whilst the r.p.m. of the engine climbing at 70 m.p.h. was 1,500. Speed tests averaged from four flights over a course of 1 kilometre showed 201 kilometres (125 miles) an hour with the engine giving 1,700 r.p.m.

After these trials the machine was handed to the Swedish military authorities, who found the starting of the engine equally easy, whilst their pilot, Lieut. Gärdin, expressed his satisfaction freely as to the behaviour of both engine and machine during flight. It was this officer who, in order to give both machine and engine a thorough endurance test, was deputed to pilot the machine with a passenger from Kiruna to Malmöslätt. The journey of 1,300 kilometres was completed in $10\frac{1}{2}$ hours. Two intermediate landings were made for re-filling petrol tanks, etc., and the total flying time was $6\frac{1}{2}$ hours, the average flying speed being 120 m.p.h.

BELFAST-LIVERPOOL AIR SERVICE

THE air-mail service between Liverpool and Belfast, particulars of which were published in last week's *FLIGHT*, was officially inaugurated on Wednesday, April 30, last. Unfortunately, exceptionally bad weather conditions prevailed, with the result that arrangements were not carried out quite according to plan—but they were carried out nevertheless.

On the Tuesday morning previous to "the day," Alan Cobham, with Major-Gen. Sir Sefton Brancker as passenger, left Liverpool at 7.35 a.m. on one of the D.H. 50 machines and arrived at Malone aerodrome, Belfast, at 9.45 a.m. The opening ceremony took place at the Belfast end on Wednesday morning, the Lord Mayor of Belfast, Alderman Sir William Turner, officiating on this occasion, when a large and representative company assembled on the aerodrome to witness the departure of the first machine. It was originally intended that Alan Cobham should have left at 10 a.m., with the Lord Mayor, the High Sheriff (Councillor M. C. McLaurin), Alderman Duff, M.P., and Sir Sefton Brancker as passengers. Bad weather, however, delayed the start until 12.17 p.m., and owing to the sodden state of the aerodrome, it was only possible to get off with two passengers, and so Sir Sefton Brancker and Alderman Duff stood aside for the Lord Mayor and High Sheriff. During the early part of the journey, the weather conditions were very unpleasant, but matters improved somewhat—except as regards visibility—as they approached Liverpool, where a landing was effected at 2.45 p.m. to the accompaniment of hearty cheers from the crowd which had gathered at Aintree aerodrome. Pilot and passengers were officially welcomed by Sir Archibald T. Salvidge, Mr. F. C. Wilson, and the Town Clerk of Liverpool—the Lord Mayor of Liverpool being unavoidably absent—and were subsequently entertained at luncheon in the Town

Lieut. Gärdin, who had already attained fame in Sweden for a record flight to Paris, declared enthusiastically that it was "a wonderful flight, everything having worked to perfection without any difficulties," and that throughout the flight the "Jupiter" engine "worked like the mechanism of a clock." As one of the Swedish papers points out, the flight, if made from Malmö in a southerly direction, would have been completed in Venice.

Any doubts which the Swedish authorities might have had as to the suitability of the "Jupiter" engine to function properly at very low temperatures were completely set at rest, and the high flying qualities of the Bristol Fighter were also recognised and appreciated; so much so, in fact, that the complete machine was immediately taken over by the Swedish Army. There has been a good deal of prejudice to overcome as to the suitability of the static air-cooled engine for service under all climatic conditions. The "Jupiter" engine has effectively dispelled any doubt in this direction; under tropical temperatures it had already proved itself at least equal to engines of water-cooled type. The trials under the Arctic conditions in Northern Sweden have now effectively demonstrated that for service under such conditions it is equally successful. The performance is one of which the Bristol Aeroplane Co. may be justly proud.

Hall, at the invitation of the Lord Mayor of Liverpool. On this occasion, Sir William Turner delivered the following message from Belfast to Liverpool:—

"My dear Lord Mayor,—I tender greetings to you and to the citizens of Liverpool on the occasion of the inauguration of the air-mail service between Belfast and Liverpool, which has taken place this afternoon, and is the first venture of the kind to be established in the United Kingdom. On such an auspicious occasion may I be permitted to convey to you and to your citizens the good wishes of the people of Belfast, and to express a hope that the ties of friendship between the great county of Lancashire and the capital of Northern Ireland will be strengthened by this new service."

At 5.30 p.m., Sir William Turner left in the aeroplane for Belfast, when he arrived back at 7.45 p.m. after a pleasant journey. After the departure of the machine from Belfast on its first trip, a telegram was sent to the King intimating the opening of the service, and the following reply was received from His Majesty:—

"Buckingham Palace.—To Sir William Turner, Lord Mayor of Belfast.—I thank you, my Lord Mayor, for your telegram on the occasion of the inauguration of the daily air-mail service between Belfast and Liverpool, which I feel will prove to be of great value to the general community.—GEORGE R.I."

It had been arranged that another D.H. 50 should leave Liverpool for Belfast on Wednesday morning also, and a start was actually made at 5.30 a.m. Owing to unfavourable weather conditions, however, the pilot, V. N. Dickinson, was unable to proceed farther than Southport Sands, where he had landed to pick up parcels.

THE THIRD INTERNATIONAL AERO EXHIBITION, PRAGUE

THANKS to the enthusiastic efforts of the Czecho-Slovak Aero Club the Third International Aero Exhibition, which is being held at Prague from May 31 until June 9 next, promises to be a very successful and representative one. Already a large number of aeronautical concerns representing, not only Czecho-Slovakia itself, but France and Germany, have arranged to exhibit aeroplanes, aero engines, and accessories, etc. The participation of Poland, Roumania, Yugoslavia and Italy has not yet been definitely settled, but it is almost certain that some or all of these countries will be represented.

The following is a preliminary list of exhibitors:—

Aeroplanes.—Czecho-Slovakia—Aero Aircraft Factory, Prague; M. Bondy and Co., Prague; Military Aircraft Works, Prague. France—Louis Breguet; Blériot Aéronautique; Dewoitine; Établissements Farman; Gourdon; Lioré et Olivier; Henry Potez. Great Britain—Armstrong-Whitworth (Siddeley Siskin II); A. V. Roe (Avro "Training-Lynx"); Blackburn Aeroplane and Motor Co. (Blackburn "Dart" Fleet Spotter). Germany—Albatros; Dietrich-Gobiet; Dornier; Junkers.

Aero Engines.—Czecho-Slovakia—Skoda; Walter; Breitfeld and Daněk. France—Lorraine-Dietrich; Salmson. Great Britain—Armstrong-Siddeley (350 h.p. Siddeley "Jaguar" and 100 h.p. Siddeley "Lynx"); D. Napier and Son (450 h.p. Napier "Lion" and 1,000 h.p. Napier "Cub"); Rolls-Royce Ltd. (650 h.p. "Condor" and 370 h.p. "Eagle IX").

Component parts, statistics, photographs, etc., will be well represented also.

S Smith and Sons, of Cricklewood, will be exhibiting a range of their well-known aviation instruments—although it is scarcely necessary to point out that these instruments will also be found on many of the machines exhibited.

Palmer Tyre, Ltd., of Shaftesbury Avenue, will be another British firm exhibiting aero accessories in the shape of their famous aero tyres and wheels.

The Exhibition will be opened by the President of the Czecho-Slovak Republic on May 31 at 11 a.m. At the conclusion of the Exhibition the first International Aeronautical Meeting will be held at the Prague aerodrome, from June 10 until June 15.

THE DAIMLER L.15

A German Light 'Plane Two-Seater, With Motor-Cycle Engine

IN view of the forthcoming Air Ministry trials, to be held under the competition rules of the Royal Aero Club, for two-seater light 'planes the following particulars of a German low-power two-seater may be of interest. The following article is based partly upon descriptions published in the German journals *Luftfahrt* and *Illustrierte Flug Woche*, and partly upon photographs and material supplied direct to FLIGHT by Herr

sufficient was learnt to show that a machine specially designed for this sort of work should be able to soar for considerable periods, and make glides of several miles.

In 1919 a monoplane glider with low-power engine was constructed at the Daimler Carriage Works, to the designs of Herr Klemm. Unfortunately the machine was damaged while testing a new propeller, and the experiments had to be

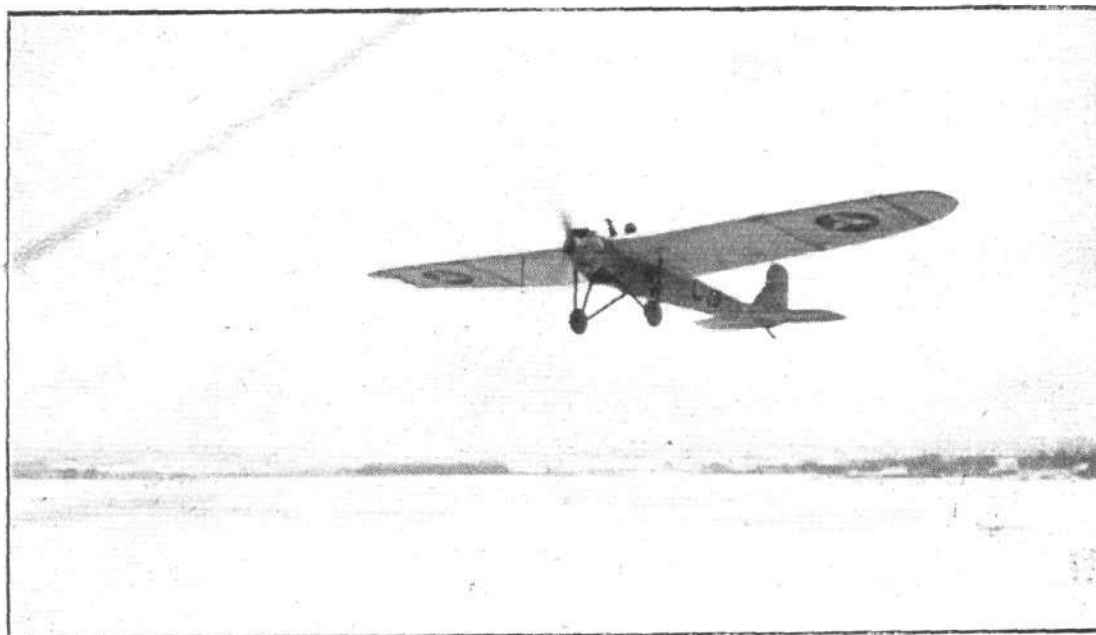
View of the Daimler L.15, showing engine housing, undercarriage, etc. The pilot is Herr Schrenk, with the designer, Herr Klemm, as passenger.



Dr. Ing. v Langsdorff of Riga, who was largely responsible for initiating the work which resulted in the construction of the L.15.

Before proceeding to give a description of the actual machine it may be of interest to give a brief history of the steps by which the present light 'plane two-seater was evolved. Already as long ago as 1918 experiments were initiated by Regierungs-Baumeister Hans Klemm, who was at that time

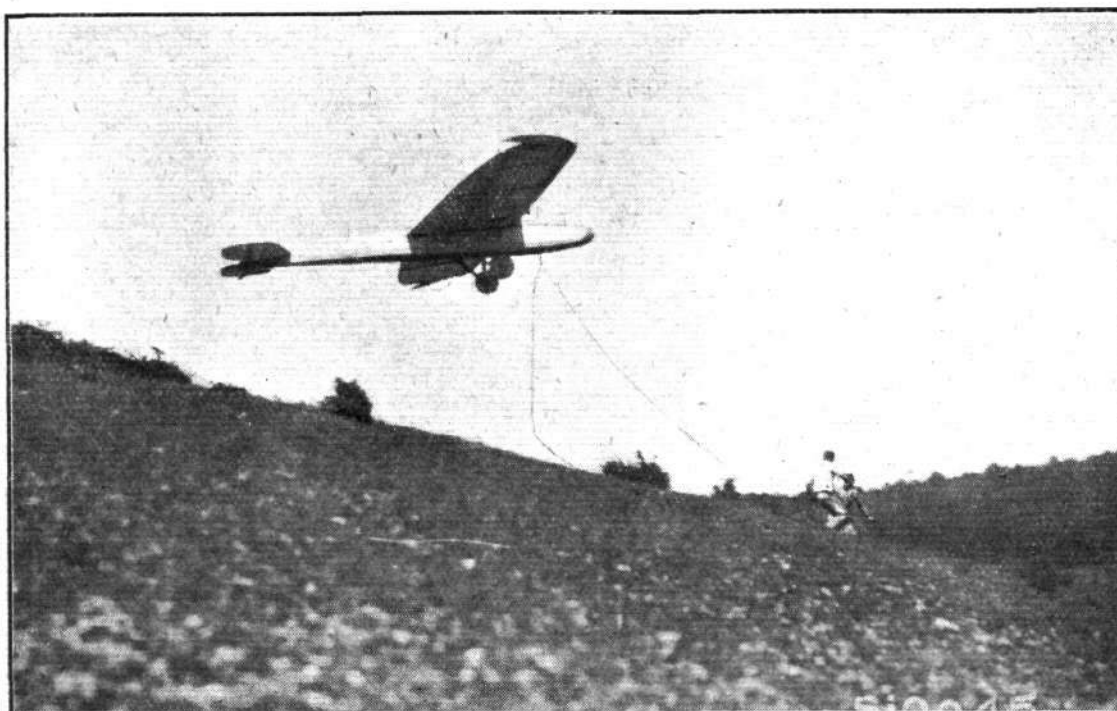
discontinued, mainly owing to the difficult financial conditions obtaining at the time. It was not until 1922 that work on the machine could be resumed. The old wings and fuselage of the 1919 machine were overhauled and reconditioned, but the machine was changed from a light 'plane to a pure glider. On this machine several glides were made by Herr Dipl. Ing. Martin Schrenk, first over a low hill near the Daimler works, and later in Schwabischen Alb, where the conditions were



The Daimler L.15 in flight over snow-covered aerodrome.

chief designer of the Daimler-Flugzeugbau, and who is now managing director of the Daimler works at Sindelfingen, near Stuttgart. The 1918 experiments were made with a machine not suitable for gliding, the Daimler single-seater fighter, L.11, piloted by Eugen von Loessl, who later became famous in the Rhön, where, unfortunately he ultimately lost his life. The early experiments indicated the possibility of soaring in the currents blowing over the slopes of a range of hills, and

much better, although not comparable with those obtaining in the Rhön. Glides of 13 minutes' duration were made, and distances of 4 kilometres (2½ miles), with a loss in height of only 250 metres (820 ft.), were covered with this machine. The gliding experiments showed the machine to be a good glider, efficient aerodynamically and possessing ample controllability. The next step was the conversion into a light 'plane, which resulted in the production of the type L.15 to

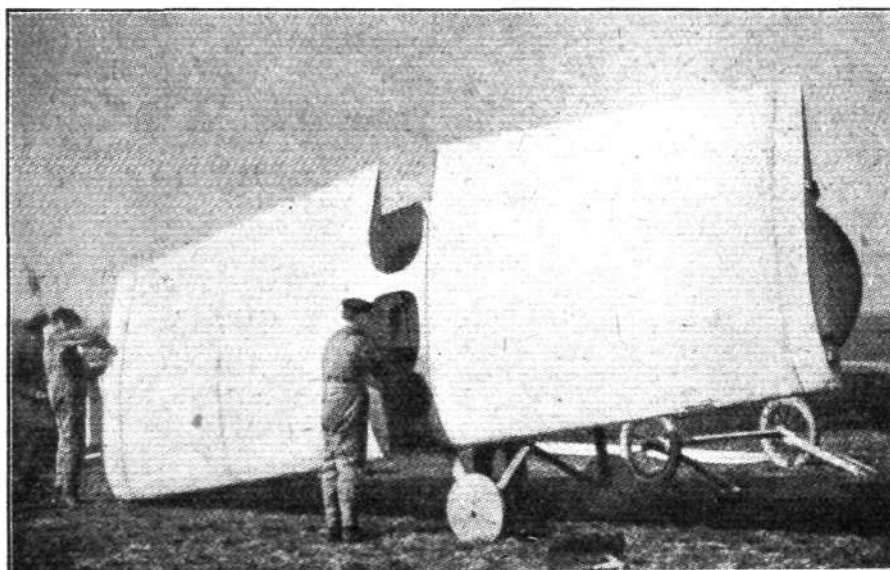


The Daimler L.15
 being launched
 as a glider.

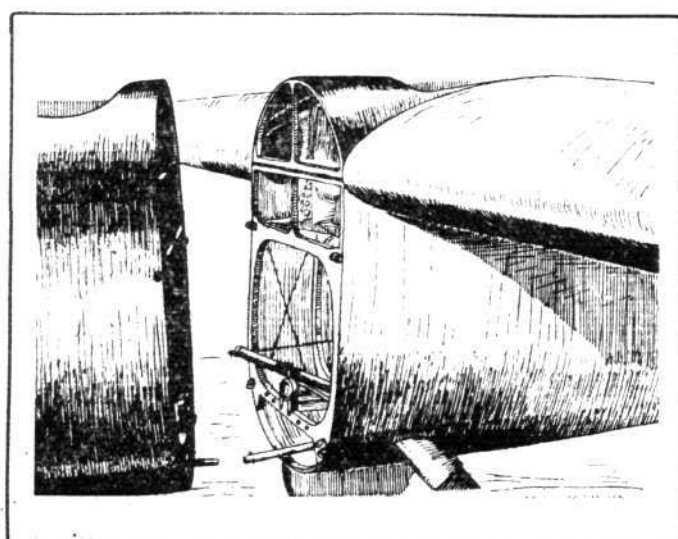
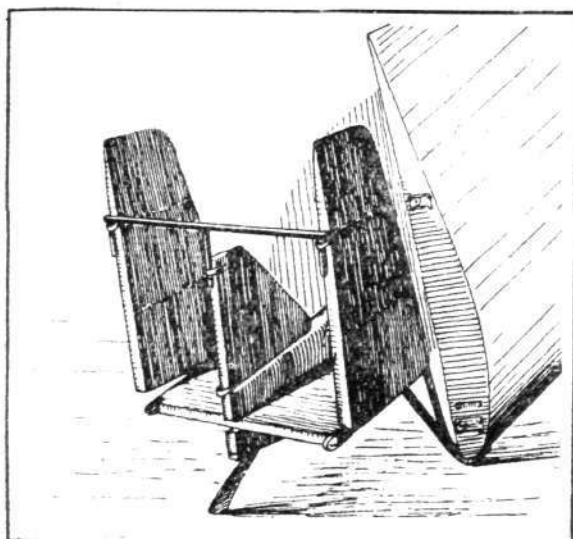
which the following notes refer. In this connection it is of interest to note that the idea of the dual purpose of light 'plane and glider has been retained, the machine being capable of being converted from one into the other very rapidly. Incidentally it may be mentioned that in one form the machine was built as a low-wing monoplane, somewhat resembling the de Havilland 53. The present machine, however, is an ordinary monoplane.

The Daimler L.15 has a fuselage of ordinary construction, with four longerons and formers and wire bracing. In section the main structure is rectangular, but fairings are added at top and bottom to give better streamlining. The covering is fabric doped in the usual way.

The cantilever monoplane wing is of ordinary construction in that it is built up over two box spars. It is, however, built in three sections for ease of transport, the two end sections being attached to the centre section by quick-release devices. Lateral control is unusual in that, in addition to the usual ailerons, pivoted wing tips are employed. We believe that as a matter of fact the original glider had those wing tips only for lateral control, and that the ailerons were added when the engine was installed.



THE DAIMLER L.15 DISMANTLED : Note the cut-away portions for pilot and passenger.



THE DAIMLER L.15 : On the left a sketch showing the folding tail, and on the right a view of the detachable " nose " of the fuselage.

The undercarriage is of the type found on torpedo 'planes, i.e., there is no axle connecting the two wheels, each of which is supported on a pyramid of three tubes, two of which run, in Vee formation, to the fuselage longerons, the third being taken to a point inside the centre-section of the wing. Shock-absorbers are housed inside the wing, no springing being provided at the bottom of the chassis struts. The wheels are of a type similar to those used by Mr. Shackleton on the A.N.E.C. monoplanes at Lympe last year, consisting of laminated ash rims with three-ply discs. On tests one of the Daimler wheels withstood without breaking a load of 600 kg. (1,320 lbs.), although its weight was but 1.2 kg. (2.64 lbs.). This form of undercarriage was chosen by Herr Klemm partly because he believes that a wheel axle raised but a few inches above the ground is likely to throw a machine on to its nose in long grass, and partly because the travel of the wheels can be made more than the radius of the wheel, as in the ordinary Vee-type chassis. Also the shock-absorbers can be totally enclosed in the wing. The objections to it are, of course, fairly obvious. A hard landing may strain the wing structure, which may consequently fail on a subsequent flight. When the centre-section of the wing is removed, the undercarriage has to be braced to stabilise it. This is done by three cables, one running from one wheel to the other, and one on each side running to a point on the fuselage. This bracing is sufficient for light loads only, of course, such as for trailing the machine behind a motor-car.

The engine fitted in the L.15 is a motor-cycle engine of 7.9 rated horse-power. It is stated that at the speed at which it is run in the machine the actual power developed does not exceed 12 b.h.p. The engine is an air-cooled Vee-twin, mounted on a steel structure in the nose of the fuselage, and cowled in all but the top of the cylinders. A planet reduction gear has been added to obtain better propeller efficiency. The petrol tank is carried behind the engine, and direct gravity feed is used.

Mention has been made of the fact that the L.15 is convert-

ible from light 'plane into glider and *vice versa*. This is accomplished by building up the nose of the fuselage as a separate unit. The "glider nose" contains a cockpit and the usual controls, so that by adding a short length to the control cables the machine can be controlled from this cockpit, while, if desired, a passenger can be carried in the cockpit between the wing spars. Incidentally, the controls then allow of the machine being used for school work (dual). For use as a light 'plane the "glider nose" is removed and the nose containing the engine and tank substituted. The fastenings used for securing the noses are of a type requiring no adjustment and no special tools. When the machine is used as a light 'plane two-seater the passenger sits immediately behind the pilot, in a cut-out in the trailing edge and just behind the rear spar. It would appear likely that with this arrangement the centre of gravity might be rather far aft, as the combined weight of pilot and passenger would, it would seem, be likely to more than make up for the weight of the engine farther forward.

But few particulars are available relating to the characteristics of the L.15. The wing span is stated to be 12.6 metres (41 ft. 4 ins.). The engine, as already stated, develops about 12 b.h.p. at the speed at which it is run. Already several very good performances have been put up by Herr Schrenk. Thus during a solo flight he reached an altitude of 2,150 m. (7,050 ft.). With passenger the machine has climbed to 1,100 m. (3,600 ft.). During a solo flight the machine remained up for 3 hours 5 mins., and while carrying a passenger a duration of 2 hours 2 mins. was attained. The longest non-stop cross-country flight made solo was 190 km. (118 miles), and one flight of 120 km. (75½ miles) was made with a passenger.

In view of the low engine power, these performances are highly creditable, more especially so when it is remembered that the machine was virtually designed four years ago, i.e., before the Rhön competitions had really shown the way to the efficient glider and light 'plane.

A WATER-TEST FOR LANDPLANES

An Interesting Air Ministry Experiment

As foreshadowed in a previous issue of FLIGHT, an interesting experiment was carried out on Friday last at Felixstowe air station by the Air Ministry. The object of this experiment was to obtain as much information as possible on the behaviour of an ordinary land machine when the latter has made a forced descent upon the sea.

For the purpose of this test the Air Ministry obtained one of the old "D.H.18" four-seater enclosed cabin 'buses, which it was proposed to "land" in the sea, and, having "rescued" the pilot, make careful observation of the machine's behaviour. The cabin was made as watertight as possible, all openings, seams, etc., being carefully caulked. No special flotation gear was fitted.

On the day of the test, conditions were quite favourable, the sea being not too rough and there being a helpful head-wind blowing. A number of officials and others gathered to witness the experiment, among whom may be mentioned Major-General Sir Sefton Branker (Director of Civil Aviation), Wing-Commander Cave-Browne-Cave (Directorate of Supply and Research), while Mr. Walker, of the De Havilland Aircraft Company, looked sadly on as the hardy "D.H.18, G-EAWW" slowly but surely turned into a submarine.

Shortly after 11 a.m., Flight-Lieut. A. C. Rea brought the "18" down low over the water, and making for an R.A.F. motor launch standing by to render first aid, effected a normal "level keel" landing. As the wheels of the machine touched

the water they naturally exerted a drag on the machine, with the result that the tail came up, and the aeroplane nosed into the water. At first it stood almost vertical, with the main planes submerged, then it slowly rose out of the water just a little, and finally settled down with the fuselage at an angle of about 45°, the lower plane almost completely submerged and the top plane just awash.

Had there been any passengers in the cabin they would probably have been provided with a rival to the new Zoo aquarium!

Meanwhile the pilot, although well out of the water, managed to retain his position—or some of it—in the cockpit during the early stages of the "landing," and when the machine began to settle he slid down the fuselage to the centre section and assisted in the loading of extra ballast into the cockpit, before leaving his craft to its watery fate.

The fuselage now assumed an angle of about 30°—the "Lion," of course, being thoroughly submerged—and the machine floated thus, drifting with the tide, for about 20 minutes. When a rope was made fast to the machine it began to sink lower into the water, until, after about 25 minutes from the time it first struck the water, the pilot's cockpit was awash. Five minutes' later "G-EAWW" settled down for good—only the tail remaining above water.

No attempt is to be made to salve the aeroplane, but the Napier "Lion" will, of course, be rescued.

Imperial Airways

AT long last a settlement has been come to in the regrettable dispute between the newly-formed Imperial Airways, Ltd., and the pilots and ground staff of the old, absorbed air line companies. For over a month the British air services were idle, and the French machines in the meanwhile reaped the benefit of the spring air-traffic work. On May 2 the following statement was issued:—"The Imperial Airways, Ltd., announce that an agreement has now been reached to the satisfaction of all concerned, between the pilots, mechanics, and ground staff of the absorbed air transport companies and the Imperial Airways, Ltd., and service will be resumed on Monday next (May 5)." The terms of the settlement have not been officially announced but it is understood that

one of the principal points of the agreement is the creation of a new post—Air Superintendent—to which Major H. G. Brackley has been appointed. Major Brackley has but recently returned from the British Air Mission to the Japanese Government.

Royal Tournament

THE Box Office seats can now be booked at 66, Victoria Street, S.W. 1, for the opening ceremony, May 22, at Olympia, or any subsequent day, afternoon or evening, up to June 7, on which day the Tournament finishes. It is well to secure seats in advance, as last year many were disappointed at the "House Full" notices which confronted them upon arrival at the show.

As far as the "World-flyers" are concerned, very little progress has been made during the past week, while the feared loss of Maj. Martin, the leader of the American team, has caused no small amount of anxiety.

Squadn.-Ldr. MacLaren, who was forced to descend at Parlu on his way to Nasirabad owing to the breakage of the reduction-gear wheel (for the second time), has been spending a very busy time striving to effect the necessary repairs to the engine. It seems that spare parts were on their way to Parlu from various parts of India and Palestine. At first it was hoped that a spare engine would be sent by air from Iraq or Karachi, but instead, a new Napier "Lion" was despatched from England by boat. The engine caught the Indian mail boat, which reaches Bombay on May 16, and from here it will be transhipped to Karachi, at which place it should arrive the following evening. So it is apparent that the British attempt will be delayed for a considerable period—which is most unfortunate, as we believe we are right in stating that the dreaded monsoons of India, China, etc., are not very far ahead now.

In the meantime, MacLaren, Plenderleith, and Andrews are making the best of a bad job in the little town of tents which has, it is reported, sprung up with amazing rapidity around the stranded machine at Parlu. Squadn.-Ldr. MacLaren expresses his gratitude for the wonderful hospitality and assistance of the Jodhpur Durbar. The latter is supplying all provisions and comforts for the stranded airmen.

As regards American progress, this also has been slow and not without mishap. Maj. Martin, who reached Chignik on April 25, was held up there by severe weather and snow

squalls until April 30, when he started off for Dutch Harbour, there to rejoin his comrades. Up to the time of writing no further news has been received as to the whereabouts of Maj. Martin, who was last observed flying about 100 miles west of Chignik. As a terrific gale was raging along the route to Dutch Harbour, it was feared that Maj. Martin may have come to grief. Hopes are, however, entertained that he and his mechanic, Sgt. Harvey, have taken refuge in one of the many coves on one of the numerous islands of this desolate part of the world—in which case it is possible that it would take many days before he could be discovered.

Meanwhile Lieut. Smith, the second in command, received an order from Washington directing him to proceed on the round-the-world flight with the three other machines on the first suitable opportunity. On May 3, therefore, the three machines left Dutch Harbour and arrived at Atka Island—one of the Aleutian Islands—having covered a distance of 350 miles. It is reported that they are remaining here some time, awaiting supplies.

The American team, of four Douglas biplanes (400 h.p. "Liberty"), consists of Maj. F. L. Martin, Lieuts. L. H. Smith, L. Wade and E. H. Nelson, and mechanics. They started from Santa Monica on March 25.

The British flight is made up of Sqdn.-Ldr. A. S. C. MacLaren, Flying Officer J. Plenderleith and Sgt. Andrews, on a Vickers (Napier "Lion") amphibian flying boat.

Respective mileage (approximate) completed to date: American, 3,400 miles; British, 5,270 miles.

FURTHER remarkable progress has been made during the past week by Lieut. Pelletier d'Oisy, who left Paris for Tokio on April 24, with the result that he has, within a space of about 12 days, not only passed the British world-flyers, but now tops the list of total mileage flown over all the other "Big Flight" aviators—American, Australian, British, French and Portuguese.

After reaching Karachi on Tuesday, April 29, of last week, Lieut. d'Oisy decided to make a complete overhaul of his machine and engine. This, it is explained, was merely a measure of precaution, and not because either machine or engine had given any trouble up to this point. Lieut. d'Oisy thought it would be better to make sure as to how matters stood before he attempted the long and difficult journey to Hanoi, where it was originally intended to make the overhaul.

In brief messages to headquarters Lieut. d'Oisy gives some interesting reports in connection with the physical and other effects of the sudden variations of temperature he encountered throughout his flight to India. These, he said, he found very trying to self and machine, in spite of the fact that both are of exceptionally strong construction!

It was not until Saturday, May 3, that Lieut. d'Oisy once again set forth. In a telegram to the French Department of

Military Aeronautics he describes his trip as follows:—"I arrived at Agra in very hot weather. Leaving Karachi at 6.45 a.m., I landed at the Agra aerodrome at 1.30 p.m., having covered the distance of 800 miles in 6½ hours. I was much shaken by gusts of hot wind during the journey, in the course of which I passed the aeroplane of a Squadron-Leader MacLaren, stopped at Parlu owing to a breakdown. On landing, I found that owing to the heat the fabric on the upper plane of my machine was beginning to strip off. I do not yet know whether I shall be able to continue my journey towards Calcutta tomorrow, but I hope to do so."

A stay was made over Sunday at Agra, during which the necessary repairs were, as far as possible, carried out. On Monday, April 5, Lieut. d'Oisy started off again at 6.30 a.m., and, in spite of the extreme heat, accomplished a successful flight of 750 miles to Calcutta, where he arrived at 1 p.m.

After landing at Dum Dum Aerodrome, an examination of the wings showed that the effect of the sun on the fabric was such that they required immediate attention and repair, which probably meant a delay of a day or so. Thus, on Monday, May 5, Lieut. Pelletier d'Oisy and his mechanic, Serg. Vesior, have flown a distance of 6,300 miles in 12 days, or 51½ actual flying hours.

About half their flight has now been accomplished, the total distance so far covered being about 5,300 miles.

CAPT. BRITO PAIA and Lieut. Sarmiento Beires, the Portuguese military pilots, who are following close behind the British and French pilots, in an attempt to fly from Lisbon to Macao (China), have also made good progress this last week. They had arrived at Baghdad on Saturday, April 26, and after a short stay here they continued their journey to Bushire, which they reached on or about April 30. Here they were held up owing to some trouble over their passports. However, they managed to overcome these difficulties, and on May 3 proceeded on their way to Chahbar descending at Bandar Abbas en route owing to unfavourable weather conditions. The following day they left Chahbar at 7.45 a.m. and arrived at Karachi at 1.5 p.m. They stated the journey had been extremely trying—a dust storm having been encountered—and they were very exhausted when they eventually arrived at Karachi.

SINCE last week Wing-Commander Goble and Flying-Officer Macintyre, who are flying round Australia on a Fairey III-D seaplane (Rolls-Royce engine), have added another thousand miles or so to their credit. Broome, where they arrived on or about April 28, was left behind shortly after, and a flight of about 600 miles accomplished, which brought them to Onslow. From here they continued on to Carnarvon, on the extreme west of Western Australia, another 3-400 miles.

Latest reports state that they are delayed at Carnarvon owing to engine trouble. They have, nevertheless, completed about three-quarters of their task, having now covered some 5,000 miles.

THE French pilot, Lapatie, accomplished a remarkable flight in a boisterous wind on April 26. He left Le Bourget

at 8 a.m., and passed successively over Metz, Strasbourg, Lyons and Tours, and returned to Le Bourget at 5.30 p.m. He covered about 950 miles at the rate of about 99 m.p.h.

AIR MINISTRY NOTICES

NOTICES TO AIRMEN

Holland: Communications regarding the Forced Landing of Aircraft

1. THE attention of pilots is drawn to the following regulations which appear in the Netherlands "Collective Regulations for the State Operation of Posts, Telegraphs and Telephones."

(i) *Urgent telegrams with priority.* (Article 462a of the *Telegraph Regulations.*)

In the event of aircraft making a forced landing or meeting with an accident where human life is involved, it is necessary that the telegrams relative thereto, in which must be included those relative to the further handling of *air mails*, must be despatched with the least possible delay.

The urgent telegrams in question will, in such cases, be given priority over the ordinary urgent telegrams, *i.e.*, the priority allowed to official telegrams of urgent nature and to official telegrams for which payment is made.

(ii) *Urgent telephone messages with priority.* (Article 125 of the *Telephone Regulations.*)

Similarly, it is necessary that there shall be no delay in complying with requests for telephonic communication in the interests of the person involved in the accident or those of the members of his family.

In such cases the urgent trunk calls in question shall be given priority over any ordinary urgent calls, *i.e.*, the priority allowed to urgent official calls. The same priority is also given to urgent trunk calls relative to the *air mails conveyed* in the event of aircraft making a forced landing.

(No. 34 of 1924.)

Engines in Civil Transport: Running Speeds

(No. 35, of 1924.)

(See No. 6 of 1924 "Notice to Ground Engineers.")

Periodical Medical Examination of Pilots for Renewal of Licences to Fly Aircraft Carrying Passengers or Goods for Hire or Reward

THE attention of all owners of aircraft and of all pilots holding licences to fly aircraft carrying passengers or goods for hire or reward is directed to para. 12 of Schedule V of the Air Navigation (Consolidation) Order, 1923, which lays down that a pilot's licence to fly aircraft carrying passengers or goods for hire or reward shall remain valid for six months or until the completion of 250 hours' flying, whichever is the shorter. A pilot must then submit himself for medical examination before his licence can be renewed, *vide* para. 51 of the Air Navigation Directions 1922 (A.N.D. 3) as amended by the similar Directions 1923 (A.N.D. 3/A).

From the foregoing it will be seen that a pilot's licence to fly aircraft carrying passengers or goods for hire or reward automatically lapses when its holder has completed 250 hours' flying, and that any aircraft flown by a pilot in these circumstances (*i.e.*, after lapse of licence) would be flying in contravention of Article 3 (1) (iii) of the Air Navigation (Consolidation) Order, 1923.

For any such contravention the owner or hirer of the aircraft and the pilot are responsible (*vide* Art. 27 of the Air Navigation (Consolidation) Order, 1923).

A pilot should, therefore, take steps to ensure that his licence is kept valid by applying to the Secretary (D.C.A.), Air Ministry, for medical examination on or shortly before the completion of 250 hours' flying, should such completion occur before the expiration of the six-monthly period.

A pilot attending the Air Ministry for medical examination should bring with him his pilot's log book.

No. 37 of 1924.

Night Flying Experiments—Croydon-Lympne Route

1. NIGHT flying experiments will be undertaken during the period May 1 to 31 inclusive, in the course of which one

or more Royal Air Force aircraft may fly between Croydon and Lympne at any altitude and on any night between sunset and sunrise, exhibiting varying systems of navigation lights.

2. The attention of all pilots is particularly drawn to the fact that these navigation lights will not necessarily be those specified by the International Air Convention.

3. In all cases a white light aft, a red light to port, and a green light to starboard will be exhibited, but the dihedral angles through which they will be visible may be individually greater or less than those required by the Air Convention. In some cases the red and green lights only will be visible from dead ahead, no white light forward being exhibited. Also when a white light forward is exhibited, its angular range of visibility will be subject to variation.

4. In the event therefore of other aircraft flying in the vicinity of the Croydon-Lympne route at night during this period a special look-out should be maintained, and the utmost caution exercised.

NOTE.—The above confirms W/T notice of April 29, 1924.

No. 38 of 1924.

NOTICE TO GROUND ENGINEERS

Engines in Civil Aircraft: Running Speeds

1. THE approval of engines for civil aircraft is based on the satisfactory completion by a representative engine of type tests, and the Certificate of Airworthiness of an aircraft is subject to the continued use of the engine in the aircraft under the conditions of power and speed upon which this type approval was granted.

2. As a result of each such type test "maximum" and "normal" engine speeds are laid down. The running of engines at, or in excess of, the maximum permissible speed, for more than a few minutes at a time in emergencies, is prohibited, since it inevitably tends to the early deterioration of the engine and increases its liability to breakdown.

3. The following table gives the normal and maximum permissible speeds of all British-built airworthy engines:—

Engine.	R.P.M.	
	Normal.	Maximum.
B.R.1 150 h.p.	1,250	1,300
B.R.2 200 h.p.	1,300	1,350
Gnome Mono	1,250	1,300
Le Rhone 80 h.p.	1,250	1,300
Le Rhone 110 h.p.	1,300	1,350
Beardmore 120 h.p.	1,300	1,400
Beardmore 160 h.p.	1,350	1,450
Green 35 h.p.	1,250	1,300
Green 100 h.p.	1,250	1,300
R.R. Hawk II	1,500	1,600
Siddeley Puma	1,400	1,500
Sunbeam Dyak	1,200	1,400
R.R. Falcon III	2,000	2,200
R.R. Eagle VIII	1,800	1,900
R.R. Eagle IX	1,800	2,000
R.R. Condor I and II	1,650	1,800
R.R. Condor III	1,900	2,100
Sunbeam Maori III	2,100	2,200
Sunbeam Manitou	2,000	2,100
Wolsley Viper	2,000	2,100
Napier Lion	2,000	2,200
Bristol Jupiter IV	1,575	1,750
Bristol Lucifer	1,600	1,760
Bristol Cherub	2,200	2,500
Siddeley Jaguar III	1,500	1,650
Siddeley Lynx	1,620	1,780

(No. 6 of 1924.)

A Fresh Helicopter Record

M. OEMICHEN has been continuing his experiments at Valentigny with his helicopter, and on Sunday, May 4, established a record for helicopters by accomplishing a flight of more than one kilometre—1,100 yards—in a closed circuit. The flight lasted 7 mins. 40 secs., and during most of the time the machine maintained a height of about 3 feet, but sometimes rose to 10 feet. The flight was officially observed by a representative of the Department of Military Aeronautics. By this performance M. Oemichen wins an award of 90,000 francs given by the French Government.

A Japanese Air Service

A REGULAR aeroplane and seaplane service has been arranged between Yokosuka and Kasumigaura, via Tokio. At first the service will be restricted to army needs, but if it proves successful it will be made available to the general public.

Other plans provide in the near future for a similar service between Yokosuka and Osaka.

Meantime the Department of Communications contemplates the construction of a large aerodrome in the neighbourhood of Osaka.

FLEET AIR WORK

IN Admiralty Fleet Orders issued last week it was announced that volunteers were required for the Naval air work of the Fleet, under the arrangements approved by His Majesty's Government, by which, to the extent of 70 per cent., the officer personnel of the Royal Air Force employed in the Fleet Air Arm may be provided from Naval officers attached temporarily to the Royal Air Force for specified periods. The salient points of the Orders are:—

Officers volunteering must be of the rank or relative rank of Sub-Lieutenant or Lieutenant, and must be not above the age of 28 on July 1, 1924. In the main officers selected will be of the Executive Branch, but a small number of (E) Officers and Officers, Royal Marines, are also required. Officers before selection will be required to pass a medical examination. Officers who volunteer for service in the Fleet Arm will be attached to the R.A.F. for certain periods, the duration of which will be decided by the Admiralty from time to time.

The periods of attachment at present adopted are approximately as follows:—(a) First period (air), four years, including a period of training; (b) second period (general naval service), two years; (c) third period (air), two years for 50 per cent. of the officers who have completed (a), the rest to remain in the general naval service; (d) fourth period (air), two years for 60 per cent. of the officers who have completed (c), the rest to remain in the general naval service; (e) fifth period (general naval service, or air, as required), for the remainder, if any, of lieutenant-commander's time, for all officers who have completed (d).

Naval or Marine officers attached to the Royal Air Force will be granted Air Force rank during attachment, the initial rank granted being that of Flying Officer, and will be eligible for advancement in the Royal Air Force, irrespective of their rank in the Royal Navy. They will continue to wear the uniform of their Naval or Marine rank, but will wear also a distinguishing badge indicating that they are attached to the Royal Air Force for services in the Fleet or Air Arm.

During the attachment officers will continue to draw their Naval full pay, and will receive in addition an allowance of

6s. a day. This may be drawn in addition to (E) pay or to G.T. or other similar continuous specialist allowance, and will be paid under the general conditions laid down for submarine allowance. The allowance will not be payable during the periods of Naval general service when the officers cease to be attached to the Royal Air Force.

When embarked during periods of attachment, their flying duties will be considered as equivalent to specialist duties. They will therefore have the rank and status and authority of their Air Force rank when they are engaged in specialist air duties; at other times, when they are engaged in General Naval duties, they will have their Naval or R.M. rank, status, and authority. They will be available for ship duty in addition to flying duty, and in order to emphasise this, they will, when appointed to a carrier or other of H.M. ships, receive an appointment from the Admiralty as well as an appointment from the Air Ministry.

Attached officers will be eligible for advancement in the Royal Air Force under R.A.F. Regulations, irrespective of rank in the Royal Navy or Royal Marines, and such advancement will be determined by the Air Ministry in consultation with the Admiralty.

Another order issued by the Admiralty in conjunction with the above states it has been decided that, in future, all air observation duties for the Fleet, including gunnery, spotting, and air reconnaissance, is to be carried out by Naval observers.

Naval observer officers will not be "attached" to the Royal Air Force, as in the case of the Naval officers to be employed as pilots and on other Naval air work, and their pay and conditions of service will continue on the same lines as at present, with the exception that, whereas Naval observers have hitherto been employed on air "spotting" duties only and air reconnaissance duties have been performed by R.A.F. officers, in future there will be only one type of observer, who will be a naval officer trained in both gunnery, spotting, and air reconnaissance work, either of which duties he will be qualified to perform and may be called upon to carry out as he may be directed.

PERSONALS

Married.

Capt. JOHN CHARLES FRANCIS HOLLAND, D.F.C., R.E., of Brompton Barracks, Chatham, son of Sir Thomas Holland, Rector of the Imperial College of Science and Technology, and Lady Holland, of 6, Wetherby Gardens, S.W., was married on April 23 at the Parish Church, Cuckfield, Sussex, to Miss ANNIE CHRISTABEL BRUNYATE, daughter of Sir James Brunyate, member of the Council of India, and Lady Brunyate, of Butlers Green House, Cuckfield.

Flight Lieut. FRANK GERALD CRAVEN WEARE, M.C. (retired), only son of Mr. and Mrs. F. Weare, of The Dell, Tunbridge Wells, was married on April 30 at St. Paul's, Knightsbridge, to ELEANOR RACHEL, only daughter of Mr. and Mrs. H. D. CHERRY DOWNES, of Southfield House, Newark-on-Trent.

To be Married.

The marriage arranged between Capt. G. BUCHANAN BAILEY, D.F.C., son of Mrs. G. M. Bailey, C.B.E., J.P., of Newport, Mon., and Miss D. MARGARET DAVIES, only daughter

of Sir John and Lady Davies, of Gowerton, Swansea, will take place quietly in London early in June.

A marriage has been arranged and will take place in June between Flight Lieut. FRANK L. C. BUTCHER, R.A.F., only son of Mr. and Mrs. Leonard W. Butcher, of Campfield Place, Leith Hill, Surrey, and CONSTANCE CORDELIA, only daughter of Rear-Admiral Sir FRANCIS and Lady HAWORTH-BOOTH, of Haworth Hall, Hullbank, Hull.

The engagement is announced of EDWARD DAYRELL HANDLEY DAVIES, R.A.F., elder son of Captain Dayrell Davies (late R.N.), and Mrs. Dayrell Davies, of South Testwood, Hants, to ALDYTH, eldest daughter of Brigadier-General and Mrs. E. T. TUDOR, Waverley Court, Camberley.

The engagement is announced of Mr. HUGH BOULTON ROBB (M.C., late R.F.C.), son of the late J. Montague C. Robb, and Mrs. Robb, of Chitley Place, Liphook, Hants, and MARY McBEAN, third daughter of Mr. H. O. BELL-IRVING and Mrs. BELL-IRVING, of Vancouver, British Columbia.

ROYAL AERONAUTICAL SOCIETY

Election of Members.—The following members have recently been elected:—

Fellow.—Prof. J. H. Parkin.

Associate Fellows.—Wing Comdr. H. M. Cave-Browne-Cave, D.S.O., D.F.C., Flight-Lieut. N. Comper, Mr. A. A. Quayle, Mr. A. H. Leak, Mr. H. Akroyd Stuart, Mr. G. R. Volkert and Mr. D. L. H. Williams.

Students.—Mr. A. A. Hammond, Mr. B. Howard, Mr. L. A. Lansdown, Mr. G. Lyon,

Mr. R. J. Moffett and Mr. R. W. Symmons.

Associate Members.—Mr. R. Michaelis and Mr. M. Miyata.

Foreign Members.—Mr. A. C. von Baumhauer, Mr. R. T. Hurley and Mr. A. Matsomoto.

Council.—The full Council for the year 1924-25 is as follows:—Prof. L. Bairstow, C.B.E., F.R.S.; Maj.-Gen. Sir W. S. Branker, K.C.B., A.F.C.; Mr. Griffith Brewer; Wing Comdr. T. R. Cave-Browne-Cave, C.B.E.; Sir Mackenzie Chalmers, K.C.B., C.S.I.; Mr. C. R. Fairey; Prof. C. F. Jenkin, C.B.E.; Maj. A. R. Low; Mr. W. O. Manning; Lieut.-Col. J. T. C. Moore-Brabazon, M.C., M.P.; Mr. J. D. North; Lieut.-Col. A. Ogilvie, C.B.E.; Lieut.-Col. M. O'Gorman, C.B., D.Sc.; Mr. J. L. Pritchard; Col. the Master of Sempill, A.F.C.; Sir Napier Shaw, F.R.S.; Maj. R. V. Southwell; Lieut.-Col. H. T. Tizard, A.F.C.; Maj. H. E. Wimperis, O.B.E.; and Mr. R. McKinnon Wood; with Mr. A. E. Turner (Hon. Treasurer).

W. LOCKWOOD MARSH, *Secretary*



THE ROYAL AIR FORCE

London Gazette, April 29, 1924

General Duties Branch

Flight Lieut. N. P. Dixon, A.F.C., is granted a permanent commn. in rank stated (April 30); Flight Lieut. (Hon. Sqdn. Leader) R. H. Portal, D.S.C., is promoted to rank of Sqdn. Leader (April 1). The following Pilot Officers are promoted to rank of Flying Officer (May 2): H. V. Michell, R. V. M. Odbert, and L. E. Maynard. Flying Officer F. G. Edgington is placed on retired list (April 30).

Stores Branch

A. Davidson, M.C., is granted a short-service commn. as Flying Officer for three years on Active List, with seny. of April 1, 1918 (April 25); R. V. Robinson (temp. Capt., I.A.R.O.) is granted a short-service commn. as Flying Officer for three years on Active List, with effect from April 22, 1924, and with seny. of March 10, 1919 (substituted for Gazette, April 15, 1924); Pilot Officer W. R. Donkin is promoted to rank of Flying Officer (April 26);

Flying Officer G. Bucknall resigns his short-service commn. (April 26) (substituted for Gazette, April 8).

Medical Branch

Flying Officer K. R. Smith, M.D., D.P.H., relinquishes his temporary commn. on ceasing to be employed (April 25).

Reserve of Air Force Officers

The following Officers are confirmed in rank, with effect from the dates indicated:—Flying Officers: A. S. Keep (Nov. 1, 1923); W. Cameron (April 2); A. H. Dalton (April 16); H. D. Humphreys (April 23); A. J. Winstanley (April 23). Pilot Officers: P. G. Addie (April 6); W. H. Herd (April 23).

Memorandum

The permission granted to Lieut. J. J. Gowing to retain rank is withdrawn on his conviction by the Civil Power (March 22).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Wing Commanders: J. N. Fletcher, A.F.C., to Special Duty List on appointment as Air Attaché to the British Embassy, Rome. 1.5.24. H. A. Williamson, C.M.G., A.F.C., to R.A.F. Depot, on transfer to Home Estab. 1.5.24. **Squadron Leaders:** O. G. W. G. Lywood, O.B.E., to H.Q., Inland Area. 1.5.24. F. H. Unwin, O.B.E., to No. 5 Flying Training Sch., Shotwick. 22.5.24.

Flight Lieutenants: M. A. Simpson to R.A.F. Depot, on transfer to Home Estab. 28.4.24. H. N. Hampton, D.F.C., to No. 1 Group H.Q., Kidbrooke. 19.5.24. J. L. Vachell, M.C., to Air Ministry. 5.5.24. P. Huskinson, M.C., to No. 10 Group H.Q., Lee-on-Solent. 19.5.24. G. Bowen to No. 1 Group H.Q., Kidbrooke. 19.5.24. C. R. Steele, to No. 1 Group H.Q., Kidbrooke. 22.5.24.

Flying Officers: F. Porter, to R.A.F. Base, Leuchars (No. 440 Flight). 24.4.24. E. A. C. Britton, D.F.C., to Air Ministry. 5.5.24. J. W. Lissett to R.A.F. Base, Gosport. 12.5.24. H. F. Luck, to No. 1 Stores Depot, Kidbrooke. 7.5.24. R. S. Barbour, to R.A.F. Depot, on appointment to a Short Service Commn. 1.5.24.



IN PARLIAMENT

R.A.F. Flying Accidents

MAJOR-GENERAL SIR FREDERICK SYKES on April 29 asked the Under-Secretary of State for Air if he will state, in regard to Royal Air Force flying accidents during the period January 1, 1920, to March 31, 1924, the numbers attributed to engine failure, error of judgment on the part of the pilot, a combination of engine failure and pilot's error of judgment, defect in aircraft construction, defect in aircraft design, and other causes, respectively?

Mr. Leach: The official records do not enable a classification of the causes of accidents to be made exactly corresponding with that requested, but I think the following table will give him approximately the figures which he desires.

Causes and number of accidents:—(1) Engine or installation failure, 90; (2) Error of judgment, 254; (3) Combination of engine failure and error of judgment, 40; (4) Defect in aircraft construction, 4; (5) Defect in aircraft design, 12; (6) All other causes, 73.

Aircraft Engine Maintenance

SIR F. SYKES asked whether, having regard to the comparative efficiency of aircraft engines maintained under the systems employed by established civil air transport undertakings, the Air Council have considered the advisability of arranging suitable courses in aero-engine maintenance to be undertaken by Royal Air Force personnel under the direction of such civil organisations?

Mr. Leach: I am unable to accept the premises that the Royal Air Force compares unfavourably with civil firms as regards efficiency of engine maintenance. The problem of such firms in maintaining with a handful of mechanics a very few aeroplanes carrying out routine flights from two or three aerodromes bears no relation to that of the Royal Air Force in maintaining many hundreds of aeroplanes at stations all over the world. The system of maintenance and inspection employed in the Royal Air Force is, as a matter of fact, very similar to that employed by civil firms, with which the officers of the Service side of the Air Ministry are fully acquainted. The problem of the Air Ministry, however, is to train mechanics in the large numbers required for the Royal Air Force, and very complete arrangements exist for doing this. Civil instructors are largely used, and, in the case of new types, valuable supplementary instruction is given to selected airmen by engine-designing firms at their works. I am unable to regard the suggestion that air transport firms should be asked to co-operate in the training of airman as either practicable or advantageous.

Air Ministry

SIR F. SYKES asked the Under-Secretary of State for Air if he is now in a position to state the number of officials appointed to the Directorate of Aeronautical Research contemplated under the proposals to reorganise the Department of Supply and Research; the number of such officials who hold engineering or scientific qualifications; and the number of posts in the Directorate at present unfilled?

Mr. Leach: In answer to the first part of the question, the reorganisation referred to consists of the abolition of the post of Director of Research and the division of his duties between a director of scientific research and a director of technical development. The former will be assisted by a deputy-director of scientific research and the secretary of the Aeronautical Research Committee, but no further additions to or formal division of the existing staff of the Directorate of Research are at present contemplated. In answer to the second and third parts of the question, the appointments of director and deputy-director of scientific research have not yet been filled, but the duties of director are being performed for the present by an established senior assistant who has both scientific and engineering qualifications.

Royal Air Force Accidents

CAPTAIN VISCOUNT CURZON, on May 1, asked the Under-Secretary of State for Air how many fatal accidents have taken place in the Royal Air Force since 1st January, 1924; whether most of the accidents have been the result of engine failure; whether he is aware that there have been

a very large number of cases of engine failure, and that recent figures work out at one failure for every 58 hours' flying; whether he can give the precise figures for the past 12 months; whether he is aware that inquiry has shown that a large number of failures are due to faulty maintenance and ground organisation; whether he is satisfied with the standard of technical knowledge and skill of the ground staffs and organisation generally; whether, in every case of engine failure, an exhaustive technical inquiry is held at the earliest possible moment; and, if not, will he take the necessary steps to see that such an inquiry is held and the results of such an inquiry recorded?

Mr. Leach: The answer to the first part of the question is 17; to the second part is in the negative; as regards the third part, recent statistics do not support the statement that there has been a very large number of engine failures, and the figure quoted (58 hours' flying per engine failure) cannot be verified from information in my Department, but is presumably taken from the 1922-23 Report of the Aeronautical Research Committee and refers to a period in 1922; as regards the fourth part, the latest return available shows that approximately 150 hours were flown per engine failure in units at home; as regards the fifth part, the proportion of engine failures due to faults of maintenance is at present under investigation, but there is no reason to suppose that the proportion is at all high; the answer to the sixth part is in the affirmative; to the seventh and eighth parts, that all serious accidents and accidents whose cause is not clear are investigated by a Service Court of Inquiry and also, when practicable and necessary, by the Accidents Investigation Branch of my Department, and that these arrangements are, in my opinion, fully sufficient.

Prague Aircraft Exhibition

SIR H. BRITAIN asked what arrangements, if any, have been made with regard to this country taking part in the forthcoming aircraft exhibition to be held in Prague?

Mr. Leach: Arrangements are being made by the Society of British Aircraft Constructors, Ltd., to secure appropriate accommodation for a representative exhibit by the British aircraft industry at the exhibition referred to, and a financial contribution from Air Votes will be made towards the expenses actually incurred for the purposes of this exhibit.

England-Prague Air Service

LIEUT.-COMMANDER KENWORTHY asked whether any further progress has been made with the arrangements for establishing the proposed air service between England and Prague, with an agreed subsidy from the Czechoslovakia Government; and what is now delaying the negotiations?

Mr. Leach: I am sorry to say that the difficulties referred to in my reply on 28th February last, still prevent the establishment of an air service between England and Prague, and pending their removal the conclusion of the permanent agreement which has been proposed would serve no purpose. The temporary agreement to which I then referred was duly ratified, but lapsed on 31st March.

Lieut.-Commander Kenworthy: Can the hon. gentleman hold out any hopes of getting rid of the German opposition to this route passing over their territory, which is holding the matter up?

Mr. Leach: The Germans are making reciprocal claims in that respect, and it is possible that they may open up the route.

Directorate of Civil Aviation Personal Assistant

MR. CASSELS (on May 2) asked the Under-Secretary of State for Air what was the nature of the previous employment, and who were the employers, of the gentleman who has recently been appointed personal assistant to the Director of Civil Aviation?

Mr. Leach: I have no information in regard to the employment of the officer referred to prior to November, 1914, but his employment since then has been as follows:—

November, 1914.—Employed in War Office, Military Aeronautics Directorate, in a civilian capacity.

October, 1915.—Enlisted in the Royal Flying Corps, subsequently posted to the War Office for duty, and served in all non-commissioned ranks up to and including Warrant Officer, First Class.

March, 1918.—Commissioned as Second Lieutenant on the General List and subsequently appointed Staff Captain in the Royal Air Force for duties in connection with personnel.

November, 1918.—Appointed Staff Officer, Second Class (Temporary Major) for personnel duties at the Air Ministry; personal assistant to the Deputy-Master General of Personnel; latterly in charge of section dealing with, demobilisation questions.

July, 1919.—Engaged by Messrs. Aircraft Transport and Travel, Ltd., in charge of personnel and staff questions, and assistant to managing director.

May, 1920.—Employed at the Air Ministry in the Department of Civil Aviation under the Deputy-Controller of Plans and Information.

August, 1922, to date.—Personal assistant to Director of Civil Aviation.

Supply and Research Department Personal Assistant

MR. CASSELLS asked the Under-Secretary of State for Air if he is aware that the position of personal assistant to the Air Member for Supply and Research, previously held by a temporary man, has been filled by a permanent civil servant; and, if so, why this substitution was made, in view of the recommendations of Lord Lytton's Committee?

MR. LEACH: Yes, Sir; a temporary non-service man was, in the interests of the Department, borne for a considerable time against the post on the permanent establishment to which my hon. friend refers, but when, in pursuance of the recommendations of the Committee referred to, the services of this temporary non-service man were dispensed with, normal procedure was reverted to and a civil servant already on the permanent establishment of the Department was appointed. This gentleman, I may add, is an ex-service man.

New Aircraft and Engines

LIEUT.-COL. MOORE-BRABAZON, on May 5, asked the Under-Secretary of State for Air the amount of money spent from the Air Estimates of 1922-23 and 1923-24 on new landplanes, deck-flying aeroplanes, seaplanes and engines for the Fleet air arm or otherwise for naval co-operation; and the amounts similarly spent on new, as distinct from reconditioned aeroplanes and engines for independent air operations and for Army co-operation?

MR. LEACH: The amount spent on new aircraft for the Fleet air arm or for naval co-operation was approximately £180,000 in 1922-23 and £508,000 in 1923-24; the amount spent on new aircraft for independent operations and Army co-operation was approximately £140,000 in 1922-23 and £775,000 in 1923-24. It is impossible similarly to differentiate the expenditure on engines, which, being of common type, are bought for the Royal Air Force as a whole and are allotted to the naval or the other machines as required; but the total amount spent on new engines was approximately £120,000 in 1922-23 and £872,000 in 1923-24.

Post-War Aeroplanes and Engines

LIEUT.-COL. MOORE-BRABAZON asked whether any fighting squadrons of the Royal Air Force intended for overland operations, as distinct from those intended for the Fleet air arm and apart from squadrons equipped for troop transport purposes, have been equipped throughout with aeroplanes and engines which have been designed or produced since the Armistice in 1918; and, if so, the types of aeroplanes and engines which have been allocated to those squadrons?

MR. LEACH: The answer to the first part of the question is that certain of the squadrons specified have been supplied with aeroplanes and engines designed since 1918, and arrangements are being made to increase their number. It would not be in accordance with the usual practice to publish the particulars asked for in the second part of the question.

Directorate of Research

MR. GREAVES-LORD asked (1) what is the cause of the non-adoption of a scheme of permanency for the ex-service technical officers in the directorate of research, Air Ministry; and the reason for the delay in the application of a suitable scheme, having in view the definite recommendation of Clause 45 of the third interim Report of the Lytton Committee in regard to technical posts; (2) whether, seeing that several schemes have been drafted within the last few years for the re-organisation of the directorate of research, Air Ministry, on a more permanent basis, he can state why none of these schemes have been adopted; and whether, in view of the advance of other nations in aircraft research and design, he proposes to adopt any of the schemes? (3) What is the constitution of the Committee or other body of persons actually responsible for the drawing up of the schemes of permanency for the personnel of the Directorate of Research, Air Ministry; what are the actual scientific attainments and experience in aeronautical research and aircraft design of the various individuals of this body; how many of them are serving officers of the Royal Air Force without scientific attainments or experience; how many are permanent civil servants without scientific attainments; how many are actual members of the staff of the Directorate of research whose experience could supply the necessary knowledge for the drawing up of a suitable scheme; and whether the offer of the associations representing the scientific staff of the Air Ministry to assist in the preliminary drafting of a scheme of reorganisation for the Directorate of Research has been refused?

MR. LEACH: I think I had better answer these three questions together and preface the reply with a general explanation of the position. The correct organisation of aeronautical research and technical development presents problems of great difficulty, and although the matter has been continuously under the consideration of the authorities of the Air Ministry and of successive Ministers for a long time, it is the fact that, while various methods of staff grading have been drafted, none has yet been formulated as a definite scheme. It is of great importance that no scheme should be adopted which would tend to hamper or stereotype the activities of the Department in this field.

As already announced, the higher direction of the work has recently been divided to correspond to its two aspects of scientific research and technical development, and the way is now clear for defining the organisation desirable for the staff generally.

While every consideration will be shown to the legitimate interests of the existing staff, their grading and organisation must depend on the policy it is desired to pursue, and not on personal claims. In particular it is right to point out that there are strong arguments against the general adoption of an unqualified principle of permanency for posts of this description.

The Committee to which my hon. and learned friend refers is presumably a Joint Committee of the Air Ministry Departmental Whitley Council, which was set up some time ago in order that the staff might have the opportunity of remarking on any proposed establishment for the Directorate of Research and the Royal Aircraft Establishment, Farnborough. This Committee is composed of members of the Research staff at headquarters and Farnborough, with the addition on the official side of the establishment officers of the Ministry, and on the staff side of the Vice-Chairman of the Council. I hope that it will now not be long before this Committee have a scheme before them.

As regards the reference to Clause 45 of the third Lytton Report, I would refer to the reply which I gave on March 15 last to the Member for Dartford.

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AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: cyl. = cylinder; I.C. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

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